

L 29136-65 EWI(m)/EPP(c)/EWG(m)/EWA(d)/EWP(j)/I/EWP(t)/EWP(b) PC-4/PT-4 IJP(c)  
RWH/JD/JG/WB/RM

TOPIC TAGS: electrochemical process, hydrocarbon, platinum, chemisorption,  
charge method, oxidation, dehydration

Experiments were made on platinum-plated electrodes having an area of 1 cm<sup>2</sup> in a 0.1 M  
hydrochloric acid solution at 25°C. The electrodes were prepared by electroplating

Card 1/3

L 29136-65

ACCESSION NR: AP5005895

of 1-n H-SO<sub>4</sub> and 1-n H<sub>2</sub>O. The charge curves were made for a constant  
of 1-n H-SO<sub>4</sub> and 1-n H<sub>2</sub>O. The charge curves were made for a constant  
of 1-n H-SO<sub>4</sub> and 1-n H<sub>2</sub>O. The charge curves were made for a constant

imate surface occupied by hydrocarbon and that occupied by hydrogen.  
The surface occupied by hydrocarbon and that occupied by hydrogen.  
The surface occupied by hydrocarbon and that occupied by hydrogen.  
The surface occupied by hydrocarbon and that occupied by hydrogen.

imate surface occupied by hydrocarbon and that occupied by hydrogen.

Card 2/3

L 29136-65

ACCESSION NR: AP5005895

"We express our thanks to Academician A. N. Frumkin for discussing with us the results of this work." Orig. and copy: 1 document, 1 photo

chemistry, Academy of Sciences SSSR)

SUBMITTED: 08Jul64

ENCL: 00

SUB CODE: 60, 62

NO REF SOV: 003

OTHER: 011

Card

L 7972-66 EWT(m)/EPF(c)/ETC/ENG(m)/ENP(j)/T/ENP(t)/ENP(s) IJP(c) DS/JD/JG/RH  
ACC NR: AP5025083 SOURCE CGDE: UR/0364/65/061/010/1268/1272

AUTHOR: Burshteyn, R. Kh.; Pshenichnikov, A. G.; Tyurin, V. S.; Knots, L. L.

ORG: Electrochemical Institute AN SSSR (Institut elektrokhimii AN SSSR)

TITLE: Chemisorption and oxidation of hydrocarbons on a platinum electrode I.

Ethane

SOURCE: Elektrokhiimiya, v. 1, no. 10, 1965, 1268-1272

TOPIC TAGS: hydrocarbon, chemisorption, oxidation, electrode, platinum, electrolytic cell

ABSTRACT: It has been demonstrated that the chemisorption of organic substances on platinized platinum is accompanied by processes of dehydrogenation, and hydrogenation and by breaking of the C-C and C=C bonds. It follows from galvanostatic charge curves that, in the chemisorption of ethylene and ethane on a platinum surface, the amount of chemisorbed hydrogen and organic groups depends on the experimental conditions. The present article examines the process of the chemisorption and oxidation of ethane on a platinum electrode, using the method of tri-

Card 1/2

UDC: 541.13

L 7972-66

ACC NR: AP5025083

angular pulse voltages with a scanning speed of 5 mv/sec. The  $i-\phi$  curves were recorded with a two-coordinate automatic recording instrument, Type PDS-021. The experiments were carried out in 1 N  $H_2SO_4$  at 90 C. The electrode, at a given potential ( $\phi$ ), was brought into contact with a solution saturated with ethane. The residence time in the solution saturated with ethane, at a potential equal to 1.1 volts, was calculated from the moment when the electrode attained a potential of 0.6 volts. Then the hydrocarbon was eliminated from the solution by passing argon through it for a determined period of time. The  $i-\phi$  curves were constructed by taking different intervals of time for the residence of the ethane in the chemisorbed state. The experimental results are exhibited graphically and in tabular form. Orig. art. has: 7 formulas, 5 figures and 1 table

SUB CODE: GC/ SUBM DATE: 30 May65/ ORIG. REF: 003/ OTH REF: 003

60  
Card 2/2

BORSHTEYN, R.M.; SHUMOVSKAYA, N.A.

Effect of chemisorbed gases on the work function of metals.

Usp.khim. 34 no.10:1753-1763 O '65.

(MIRA 38:11)

1. Institut elektrokhimii AN SSSR.

L 12894-66 EWT(m)/ETC(F)/ENG(m)/EWP(v)/EWI(j)/T/EWP(t)/EWP(b) IJP(c) DS/JD/NW/JG/RM  
 ACC NR: AP5027584 (A) SOURCE CODE: UR/0364/65/001/011/1391/1394

AUTHOR: Tarasevich, M. R.; Radyushkina, K. A.; Burshteyn, R. Kh.

ORG: Institute of Electrochemistry, Academy of Sciences SSSR (Institut elektrokhimii Akademii nauk SSSR)

TITLE: Ionization of oxygen on disperse platinum catalysts in acid solutions <sup>11.44.56</sup>

SOURCE: Elektrokhiimiya, v. 1, no. 11, 1965, 1391-1394 <sup>27</sup>

TOPIC TAGS: oxygen, reduction, platinum, electrochemical analysis <sup>B</sup>

ABSTRACT: Investigation of the electrochemical activity of platinum catalysts in mixture with and without carbon, using Tefleks as the binding material is described. 60 mm diameter porous plates with an active layer deposited on them were used. Electrochemical tests of the gas-diffusion electrodes were made in a teflon cell. The electrolytes were 5 N H<sub>2</sub>SO<sub>4</sub> and 14.8 N H<sub>3</sub>PO<sub>4</sub>. The pressure drop between the gas and the electrolyte was about 0.5 atm. Electrochemical activity was evaluated from the current density produced at 0.7 v vs the hydrogen electrode. In 5 N H<sub>2</sub>SO<sub>4</sub> at 70°C, a carbon electrode containing no platinum catalyst has an equilibrium potential of 0.72 v and exhibits electro-

Card 1/2

UDC: 541.13

L 12094-00

ACC NR: AP5027584

3  
chemical activity of the order of  $0.3 \text{ ma/cm}^2$ . Upon the introduction of Pt catalyst into the carbon by the reduction of  $\text{H}_2\text{PtCl}_6$  with formaldehyde, the equilibrium electrode potential increases to 0.93 v. Increase of the temperature from 20 to  $80^\circ\text{C}$  at 0.7 v leads to an increase in current density from 10 to  $70 \text{ ma/cm}^2$ . At  $100^\circ\text{C}$ , however, the catalyst becomes poisoned by the reduction of sulfuric acid to  $\text{H}_2\text{S}$ . Even more active Pt catalyst electrodes were obtained by the reduction of  $\text{H}_2\text{PtCl}_6$  with sodium borohydride. On this catalyst, however, the reduction of sulfuric acid begins above  $50^\circ\text{C}$ . The electrochemical activity of the above electrodes in  $14.8 \text{ M H}_3\text{PO}_4$  in a broad temperature interval is shown. The authors express their gratitude for conducting x-ray structural analyses to Yu. M. Polukarov, Z. V. Semenova and Ye. A. Slesareva. Orig. art. has: 4 figures, 1 table.

SUB CODE: 07,11/ SUBM DATE: 11Apr65/ ORIG REF: 002/ OTH REF: 005

Card 2/2

HW

BURSHTYN, R. Kh.; PONOMARENKO, Ye. A.

Mechanism of electrolyte adsorption on coal. Zhur. fiz. khim. 39  
no. 1:255-257 Ja '65 (MIRA 19:1)

1. Institut elektrokhemii AN SSSR. Submitted November 10, 1963.

PSHENICHNIKOV, A.G.; KRYUKOV, Yu.I.; BURSHTEYN, R.Kh.

Electrooxidation of ethylene on electrodes with Pt catalysts.  
Elektrokhimiia 1 no.12:1476-1479 D '65.

(MIRA 1981)

1. Institut elektrokhemii AN SSSR. Submitted April 3, 1965.

SHUMILOVA, N.A.; ZHUTAYEVA, G.V.; TARASEVICH, M.R.; BURSHTEYN, R.Kh.

Oxygen adsorption on platinum studied by the method of triangular  
voltage pulse. Zhur. fiz. khim. 39 no.4:1012-1016 Ap '65.  
(MIRA 19:1)

1. Institut elektrokhemii AN SSSR. Submitted June 19, 1964.

TARASEVICH, M.R.; SHUMILOVA, N.A.; BURSHTEYN, R.Kh.

Study of the adsorption and ionization of oxygen by the method of triangular voltage pulse. Report No.2: Ionization of molecular oxygen on silver in alkaline solution. Izv. AN SSSR. Ser. khim. no.1:32-37 '66. (MIRA 19:1)

1. Institut elektrokhemii AN SSSR. Submitted August 16, 1963.

L 31817-66 FSS-2/EWT(1)/EWT(m)/EEC(k)-2/ETC(f)/EWP(j)/T IJP(c) DS/WW/RM/WH

ACC NR: AP6012439 EWP(e) (A) SOURCE CODE: UR/0364/65/001/012/1476/1479

AUTHOR: Pshenichnikov, A. G.; Kryukov, Yu. I.; Burshteyn, R. Kh. 27

ORG: Institute of Electrochemistry, Academy of Sciences SSSR (Institut elektrokhimii Akademii nauk SSSR)

TITLE: Electrooxidation of ethylene on electrodes containing Pt-catalysts

SOURCE: Elektrokhimiya, v. 1, no. 12, 1965, 1476-1479

TOPIC TAGS: ethylene, fuel cell, electrochemistry, platinum, catalyst, oxidation 29

ABSTRACT: Since porous electrodes produce large currents per unit area of the apparent surface in this work, oxidation of ethylene on porous gas-diffusion electrodes containing platinum catalysts was investigated. Experiments were conducted in 14.5 M phosphoric acid at 150-200°C in a teflon cell. The electrodes were produced by depositing a thin film of catalyst with polytrifluoroethylene on the porous graphite plate and baking at 200°C. The following catalysts were used: (1) platinized carbon containing 10% Pt; (2) catalyst similar to (1) but containing 9% Pt and 1% Rh; (3) carbon mixed with 25% Pt reduced with formaldehyde; (4) platinum block reduced with formaldehyde; (5) skeletal platinum catalyst produced by leaching Pt-Li (1:10) alloy; (6) platinum block with 10% Rh, produced by coprecipitation from  $H_2PtCl_6$  and  $RhCl_3$  solutions. Skeletal platinum and platinum containing 10% Rh produces sufficiently active elec-

Card 1/2

UDC: 541.135.52-44

L 31817-66

ACC NR: AP6012439

trodes. For a catalyst containing 10% Rh at 200°C and E=0.55 volt, current density reaches 150-200 ma/cm<sup>2</sup>. Tests of electrode No. 6 for duration of operation show that in the first 2 hrs significant decrease of activity takes place and at 200°C and E=0.55 v, current density reaches a constant value of 50 ma/cm<sup>2</sup>. Investigations were also made of the effect of temperature on current density. For electrode No. 4, the log of current density is linearly dependent on temperature in the 150-200°C region. From the slope of this line the energy of activation for the oxidation of ethylene was calculated to be 20 kcal/mol·°C. Orig. art. has: 5 figures, 1 table.

SUB CODE: 07,09/

SUBM DATE: 03Apr65/

ORIG REF: 001/

OTH REF: 006

Card 2/2

L 36923-66 EWT(m)/T DS

ACC NR: AP6008499

(A)

SOURCE CODE: UR/0062/66/000/001/0032/0037

AUTHOR: Tarasevich, M. R.; Shumilova, N. A.; Burshteyn, R. Kh.

ORG: Institute of Electrochemistry, Academy of Sciences, SSSR (Institut elektrokhemii Akademii nauk SSSR)

TITLE: Investigation of adsorption and ionization of oxygen by the triangular voltage pulse method. Communication 2. Ionization of molecular oxygen on silver in an alkaline solution

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 1, 1966, 32-37

TOPIC TAGS: oxygen, gas ionization, gas adsorption, electrolytic deposition, silver

ABSTRACT: In this investigation the authors study the ionization of molecular oxygen on a silver electrode in an alkaline solution. The anode and cathode branches of the polarization curves are measured by applying single or periodic triangular voltage pulses to a rotating silver electrode. A 8.2-mm-diameter electrode is used when the rates of change of the potential are up to 1 V/sec and 0.6 mm when the rate of increment of the potential is above 10 V/sec. The experiments are carried out in 1 N KOH at 25% and an oxygen pressure of 1 atm. The electrolytic oxygen used is subjected to additional purification by passage through activated

Card 1/2

UDC: 541.183+541.13

L 36923-66

ACC NR: AP6008499

3

charcoal, a solution of permanganate, a furnace with palladium-coated asbestos, a solution of plumbite, calcium chloride, and a trap cooled to  $-100^{\circ}\text{C}$ . All potentials are reduced relative to a reversible hydrogen electrode in the same solution. The data obtained from the investigation are explained both on the assumption of the possibility of a parallel of currents of two- and four-electron processes of the ionization of oxygen and by the occurrence of the reaction  $\text{O}_2 \rightarrow \text{O}_{2\text{ads}} + \text{H}_2\text{O} + 2\text{e} \rightarrow \text{OH}^- + \text{HO}_2$  with subsequent ionization or catalytic decomposition of the hydrogen peroxide being formed. It is found that oxygen can be adsorbed on the surface of silver both in an atomic and in a molecular form and that the heat of chemisorption of oxygen on silver decreases with an increase of surface coverage. This indicates a change of character of the bond of the adsorbed oxygen with the silver. Thus, it is assumed that with small positive values of the potential to which small surface coverages and large heats of adsorption correspond, the oxygen is adsorbed as atoms which are later ionized with the formation of the ions  $\text{OH}^-$ . With larger positive values of the potential the oxygen is adsorbed in a molecular form with the subsequent occurrence of the reaction. It is further found that in the region of potentials from 0.85 to 0.05 V there is a change in the number of electrons participating in the reaction, from 2 to about 4, and that strengthening of the bond of oxygen with the surface of silver leads to inhibition of the ionization of oxygen. The authors thank A. N. Frumkin for his interest in the work. Orig. art. has: 2 formulas, 4 figures, and 1 table.

SUB CODE: 07/ SUBM DATE: 16Aug63/ ORIG REF: 013/ OTH REF: 004  
Card 2/2 *DD*

*BURSHTEYN, Sh. A.*

USSR/. General Problems of Pathology. Tumors

U-4

Abs Jour : Ref Zhur - Biol., No 5, 1958, 23041

Author : ~~Burshteyn, Sh. A.~~, Varshavskiy, D.M., Ilyevich, A.I.,  
Ladodub, Yu.Ye.

Inst : -

Title : The Effects of Radioactive Phosphorus on the Hematopoietic System in Leukemias and Polycythemia Vera.

Orig Pub : V sb.: Vopr. luchevooy terapii, Kiyev, Gosmedizdat, USSR  
1956, 86-92

Abstract : The treatment of patients with chronic myeloid leukemia (CML) (22) and chronic lymphatic leukemia (CLL) (18) with  $P^{32}$  leads to clinical and hematologic remission of 6-12 months' duration. In cases of CML the therapy was followed by a return of the peripheral leucocyte count to normal, and a tendency toward normalization of the differential was noted; there was a significant decrease in the number of nucleated cells in the bone

Card 1/2

U.S. President - Rebuilding + Encouraging Inst.

Hemopoietic changes in patients with cancer of the stomach

globin of the peripheral blood varied between 80-72% of normal and was about equally distributed among the patients of stages III and IV of the disease. No correlation

the hemoglobin estn and the cont. of PCL of the hemoglobin

BURSHTEYN, Sh. A.

AL'TGAUZEN, A.Ya., professor, (Khar'kov, ul. 14-go s'yezda Sovetov, d. 2, kv. 20); BURSHTEYN, Sh.A., (Khar'kov, Rymarskaya ul., d. 19, kv. 14.

In vivo diagnosis of cancer metastases in the bone marrow of the sternum [with summary in English] Vop. onk., 2 no.6:737-741 '56 (MLRA 10:4)

1. Iz Ukrainского rentgeno-radiologicheskogo i onkologicheskogo instituta (dir.-dots. Ye. A. Bazlov)  
(STERNUM, neoplasms  
metastatic of marrow, early diag.)

L 17557-63

ENT(1)/ENT(m)/BDS/ES(j)

AMD/AFFTC/ASD AR/K

ACCESSION NR: AT3002368

S/2930/62/000/000/0103/0109

AUTHOR: Burshteyn, Sh. A. (Kharkov)

TITLE: Early blood changes in rats during acute radiation sickness

SOURCE: K voprosam ranney diagnostiki ostroy luchevoy bolezni;  
sbornik nauchnykh rabot. Kiev, Medgiz USSR, 1962, 103-109

TOPIC TAGS: blood change, radiation sickness, acute radiation  
sickness, erythrocyte, lymphocyte, neutrophil, leucocyte

ABSTRACT: This morphological study of blood changes in the early development of acute radiation sickness is part of a more extensive work (no details given) conducted by the author's colleagues using different investigation methods. Experiments were conducted on 8 groups of rats X-irradiated (RUM-3 unit, 28.5-32.5 r/min) in single total doses ranging from 1200 to 150 r. Animals were killed 1, 24, 48, and 72 hrs after irradiation and blood analyses were made using the following indices: hemoglobin content; number of erythrocytes, reticulocytes, and leucocytes in 1 mm<sup>3</sup>; leukocytic formula (neutrophils and lymphocytes); number of thrombocytes; qualitative changes in protoplasm and nuclei of blood formed elements. It was found that

Card 1/3

L 17557-63

ACCESSION NR: AT3002368

1 hr after irradiation the number of leucocyte, is reduced by 14-40% compared to the norm, after 24 hrs it is reduced by 48-85%, after 48 hrs it is reduced by 71-95%, and after 72 hrs by 76-97%. For all radiation doses a leucopenic reaction is observed, but there is no direct correlation between radiation dose and leucocyte change. Nor is any correlation found between the number of lymphocytes and neutroffils and the radiation dose. 1 hr after irradiation both lymphopenia and neutropenia develop. For 1200-750 r, monocytes and eosinophils in the white blood completely disappear after 24 hrs, and for 450 and 600 r their numbers are reduced. After 24 hrs changes in white blood nuclei and protoplasm are observed for all radiation doses. Blood smears reveal gigantic hypersegmented neutroffils, vacuolization of cell nuclei and protoplasm, cytolysis, lysis, pycnosis of nuclei, toxic granulation in neutrofil protoplasm, lymphocytes with divided nuclei, and changes in tinctorial properties of white blood corpuscles. In the red blood, hemoglobin and erythrocytes remain at their initial level throughout the investigation (1 to 72 hrs) while the reticulocytes decrease and after 72 hrs cannot be found in the blood smears. No thrombocyte changes are found. The author concludes that acute radiation sickness is characterized by qualitative and quantitative changes in the blood shortly after irradiation and that leucopenia,

Cord 2/3

L 17557-63

ACCESSION NR: AT3002368

lymphopenia, and reticulopenia can be considered as early blood reactions. Orig. art. has: 1 figure, 2 tables.

ASSOCIATION: None

SUBMITTED: 00

DATE ACQ: 28May63

ENCL: 00

SUB CODE: AM

NO REF SOV: 014

OTHER: 002

Card 3/3

L 17556-63 EWT(1)/EWT(m)/BDS/ES(j) AMD/AFFTC/ASD AR/K  
 ACCESSION NR: AT3002369 S/2930/62/000/000/0110/0114

AUTHOR: Burshteyn, Sh. A. (Kharkov); Tsybenko, N. A. (Kharkov)

TITLE: Erythrocyte diameter change in early period of acute radiation sickness 19 57

SOURCE: K voprosam ranney diagnostiki ostroy luchevoy bolezni; sbornik nauchnykh rabot. Kiev, Medgiz USSR, 1962, 110-114

TOPIC TAGS: radiation sickness, acute, radiation sickness, erythrocytes, microcytosis

ABSTRACT: White rats were exposed to total X-irradiation (RUM-3, 28.5-32.5 r/min) in single doses ranging from 1200-450 r. The erythrocyte diameter was determined by a micrometric method using a dry stained smear. The erythrocyte diameter norm used was 6.3 microns (based on findings of other investigators). In 200 erythrocytes the largest and the smallest diameters were measured and the diameter value was determined by averaging these measurements. 1 hr after irradiation no changes in erythrocyte diameters were observed for any of the radiation doses. After 24 hrs for 1200 r the erythrocyte diameter value decreased to 6.0, after 48 hrs to 5.7, and after Card 1/2

L 17556-63

ACCESSION NR: AT3002369

72 hrs to 5.4. It was established that erythrocyte diameter decrease after X-irradiation is uniform in the early period of radiation sickness and the onset of microcytosis depends on radiation dose. The mechanism of erythrocyte diameter increase or decrease has not been explained. Some authors attribute the diameter change to change in the physico-chemical state of the erythrocyte, others to change in the physico-chemical properties of its surrounding medium, and others to the accumulation of toxic substances. Another unsolved problem is to what extent is erythrocyte diameter change determined by disturbed hemopoiesis. A comparison of data on the blood erythrocyte diameter with the marrow erythrocyte diameter shows that microcytosis appearing in the blood in acute radiation injuries does not depend on microcyte entry from the marrow because it originates in the peripheral blood. Microcytosis which appears shortly after leucopenia develops can be used as a functional deficiency index for red blood in radiation sickness. Orig. art. has: 1 figure, 1 table.

ASSOCIATION: None

SUBMITTED: 00

DATE ACQ: 28May63

ENCL: 00

Card 2/2 SUB CODE: AM NO REF SOV: 019

OTHER: 000

ARNAUTOV, A.K.; BURSHTEYN, Sh.A.; GENES, V.S.; KOCAN, I.K.; MAMATYUK, Ye.M.;  
LITVINENKO, A.S.; MOSKALENKO, I.P.; NIKOLAYEVA, M.G.; PISKAREVA, Ye.V.;  
POPOVA, L.Ya.; HUDNEV, L.I.; SIDYAKIN, V.V.; TKACH, V.K.;  
FASTYUCHENKO, O.V.; FISUN, A.N.; F' NKEL', L.A.; TSYBENKO, N.A.;  
SHRAMENKO, B.I.

Comparative study on the effect of rays (197 kv) and braking radiation generated with linear accelerator (3 Mev) upon animals. Radiobiologiya 2 no.2:211-215 '62. (MIRA 15:4)

1. Khar'kovskiy institut meditsinskoy radiologii i Ukrainskoy fiziko-tekhnicheskoy institut AN USSR, Khar'kov.  
(RADIATION--PHYSIOLOGICAL EFFECT)

ARNAUTOV, A. K.; BURSHTEYN, S. A.; GENES, V. S.; DZHAFAROV, G. K.;  
KOGAN, I. A.; MAMOTYUK, Ye. M.; NIKOLAYEVA, M. G.; PISKAREVA,  
Ye. V.; POPOVA, L. Y.; TKACH, V. K.; FASTUCHENKO, O. V.;  
FRENKEL', L. A.; TSYBENKO, P. A.

Characteristics of some early reactions of rats, irradiated  
with various doses, to burning by flame. Radiobiologiya 2 no.3:  
406-413 '62. (MIRA 15:7)

1. Institut meditsinskoy radiologii, Khar'kov.

(X RAYS---PHYSIOLOGICAL EFFECT)  
(BURNS AND SCALDS)

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 5,  
p 132 (USSR) 15-57-5-6619

AUTHORS: Burshteyn, S. I., Davtyan, O. K., Tikhonyuk, R. V.

TITLE: A Study of the Adsorption Properties of the Brown-Green Clays in the Odessa Deposit (Issledovaniye adsorbtsionnykh svoystv buro-zelenykh glin Odesskogo mestorozhdeniya)

PERIODICAL: Tr. Odessk. un-ta, 1956, Vol 146, ser. khim. n.,  
Nr 5, pp 83-90.

ABSTRACT: The brown-green clays of the Kuchurgan deposit in the Odessa district were investigated, especially their adsorption properties and their activation. The chemical composition of these clays is (in percent)  $\text{SiO}_2$  62.08,  $\text{Al}_2\text{O}_3$  14.9,  $\text{Fe}_2\text{O}_3$  5.0,  $\text{CaO}$  6.1,  $\text{MgO}$  0.8,  $\text{SO}_3$  0.3, and others 6.85. The clays are beidellitic and are of the same color as the activated Zikeyevskiy trepel (tripoli). The adsorption of green beidellitic clays is similar to the adsorption of the Gumbriya clays, among the best of natural adsorbents. The brown-green

Card 1/2

15-57-5-6619

A Study of the Adsorption Properties of the Brown-Green Clays (Cont.)

clays were activated for two hours in 30 percent sulfuric acid or in ten percent hydrochloric acid. On testing with sunflower oil this material gives a discoloration factor 20 percent greater than that for the Zikeyevskiy tripoli. These results confirm the suitability of using the Odessa brown-green clays for purifying vegetable oils.

S. P. Sh.

Card 2/2

BURSHTEYN, S.I.; DAVTYAN, O.K.; TIKHONYUK, R.V.

Studying adsorptive capacity of Odessa brown-green clays.  
Bent. gliny Ukr. no.2:128-135 '58. (MIRA 12:12)

1.Odesskiy gosudarstvennyy universitet.  
(Odessa Province--Clay) (Adsorption)

AUTHORS: Taubman, A.B., Burshteyn, S.I. SOV-69-20-5-3/23

TITLE: Some Specific Features in the Adsorption of Surface-Active Substances From Non-Aqueous Solutions (O nekotorykh osobennostyakh adsorbtsii poverkhnostno-aktivnykh veshchestv v nevodnykh sredakh)

PERIODICAL: Kolloidnyy zhurnal, 1958, Vol XX, Nr 5, pp 539-545 (USSR)

ABSTRACT: In the article, various facts which permit the formulation of some important laws of adsorption from non-aqueous solutions are considered. Formamide is especially useful for the investigation of the adsorption laws, because it has very pronounced polar properties (dielectric constant = 84, dipole moment = 3.2) and a relatively high surface tension. In Figure 1, the surface tension isotherms of alcohols, acids, and amines dissolved in formamide are shown. It is evident that the adsorption capacity of these compounds increases sharply in homological series. In formamide, solvation appears only on the liquid-vapor interface in the relation of the polar groups of the dissolved molecules which effect the interaction with the solvent by means of the hydrogen bonds. The adsorption from a non-polar hydrocarbon medium leads to the formation of adsorption layers only on the interface of

Card 1/3

SOV-69-20-5-3/23

Some Specific Features in the Adsorption of Surface-Active Substances From Non-Aqueous Solutions

the hydrocarbon and the polar liquids. Figure 2 shows that the surface activity of molecules of diphilic structure is determined by the adsorption of the polar groups, not of the hydrocarbon chains. The influence of the chain length is negligible. The different groups may be arranged in the following series according to adsorption capacity:  $\text{OH} \geq \text{COOH} \geq \text{NH}_2 \geq \text{COOR} > \text{J} = \text{Cl}$ . The adsorption work, e.g. in the adsorption of the carboxyl group from octane, amounts to 2,500 kcal/mole. The differences in the polar properties of the solvent affect the adsorption capacity of the surface-active molecules. Figure 4 shows that at the transition from the not-easily polarizing octane and cyclohexane to the easily polarizing benzene, the adsorption capacity drops sharply. The solvation of the hydrocarbon chains by the solvent transforms them into gases and excludes the pos-

Card 2/3

SOV-69-20-5-3/23  
Some Specific Features in the Adsorption of Surface-Active Substances From  
Non-Aqueous Solutions

sibility of the formation of condensed adsorption layers on  
the interface of two liquids. There are 4 graphs, 1 table,  
and 12 references, 8 of which are Soviet and 4 English.

ASSOCIATION: Institut fizicheskoy khimii AN SSSR, Otdel dispersnykh sistem  
(Institute of Physical Chemistry of the USSR Academy of Sci-  
ences, Department of Dispersed Systems). Odesskiy universi-  
tet im. Mechnikova (Odessa University imeni Mechnikov)

SUBMITTED: June 2, 1958

1. Adsorbents--Analysis 2. Solutions--Properties 3. Amides  
--Applications

Card 3/3

DAVTYAN, O.K.; BURSHEYN, S.I.

Adsorptive capacities of Odessa green clays and prospects  
for their industrial use. Bent.gliny Ukr. no.3:149-157  
'59. (MIRA 12:12)

1. Odesskiy gosudarstvennyy universitet.  
(Odessa Province--Clay)

DAVTYAN, O.K.; BURSHTEYN, S.I.; RI BOK SUN

Filtering and absorptive properties of Odesa green clays.  
Nauch. ezhegod. Khim. fak. Od. un. no.2:123-125 '61.  
(MIRA 17:8)

BURSHTEYN, TS. A.

BURSHTEYN, TS. A.

Pathological modifications in flail knee-joint after resection.  
Khirurgiya, Moskva No. 11, Nov. 50. p. 68-70

1. Of the Morphological Laboratory (Head--Honored Physician  
P. P. Dvishkov), Central Scientific-Research Institute of Prostheses  
and Prosthesis Construction.

ChL L 20, 3, March 1951

BURSHTEYN, Ts. A.

Dissertation: "Treatment of a Dangling Joint After Its Resection in Connection With Gunshot Wounds." Cand Med Sci, Central Inst for the Advanced Training of Physicians, 18 May 54. Vechernyaya Moskva, Moscow, 7 May 54.

SO: SUM 284, 26 Nov 1954

L 9698-66	EWT(m)/EWP(i)/T	RDI	WV/RM	SOURCE CODE: UR/0286/65/000/019/0069/0069
ACC NR: AP5026526				
AUTHORS: Burshteyn, V. Kh. <sup>44,55</sup> Lyubova, O. A. <sup>44,55</sup>				
ORG: none				
TITLE: Method for improving <u>impact stability</u> <sup>15</sup> of plastics. Class 39, No. 175222 <sup>15</sup>				
SOURCE: Byulleten' izobreteniy i tovarnykh anakov, no. 19, 1965, 69				
TOPIC TAGS: plastic, polymer, teflon, styrene, <u>plastic filler</u> <sup>44,55</sup>				
ABSTRACT: This Author Certificate presents a method for improving the impact stability of plastics made by <u>copolymerizing styrene</u> with $\alpha$ -methylstyrene and a polymeric <u>filler</u> . <sup>15</sup> The filler is incorporated into the polymer by a hot rolling process. To obtain plastics suitable for use at high frequencies (up to $10^{10}$ cycles/sec), <u>polytetrafluorethylene</u> in quantities of 20--30 wt % is used as filler.				
SUB CODE: 11/		SUBM DATE: 18Jan62		
Card 1/1		UDC: 678.747.22-13+678.046.7.002.2		

URSHTEYN, YA. A.

PA68T1

USSR/Academy of Sciences  
Zoology

Mar/Apr 1948

"The Third Conference of the Scientific Research Institute of Zoology of Moscow State University on Problems of Hydrobiology and Ichthyology," Ya. A. URSHTEYN, 8 pp

"Zool Zhur" Vol XXVII, No 2

Session convened 8-11 Mar 1947 in Moscow at Biological Faculty of Moscow State U imeni M. V. Lomonosov. Subject matter covered wide field but discussions were limited to reservoirs and waterways of Far East. Gives minutes of daily sessions.

68T1

BENYAKOVSKIY, M.A.; BURSITSEYN, Ya.A.; MEL'NIKOV, G.A.

Mastering thin sheet rolling on the 2800/1700 semicontinuous  
mill. Stal' 25 no.8:722-725 Ag '65. (MIRA 18:8)

1. Cherepovetskiy metallurgicheskiy zavod.

SREDIN, V.V., inzh.; BURSHTEYN, Ya.I.; DERGUNOV, V.I.; TARASENKOV, P.M.;  
CHERNENKO, A.I.

Laying pipes above ground at oil refineries. Stroi. truboprov. 6  
no.3:16-18 Mr '61. (MIRA 14:3)

1. Institut Lengiprogaz, Leningrad.  
(Pipe)

BURSHTEYN, Ye.F.

History of the geological study of the Rudnyy Altai. Biul.MOIP.Otd.geol.  
31 no.1:103-117 Ja-F-'56. (MLRA 9:7)  
(Altai Mountains--Geology)

BURSHTEYN, Ye.F.; NUKANOV, K.M.

Plattnerite in oxidized zinc ores of the Alaygyr deposit (Central Kazakhstan). Zap. Vses. min. ob-va 87 no.4:498-500 '58.

(MIRA 12:1)

(Kazakhstan--Plattnerite)

(Kazakhstan--Zinc ores)

BURSHTEYN, Ye.F.

Some characteristics of the geology structure of the Alaygyr ore field (central Kazakhstan). Izv.vys.ucheb.zav.;geol.i razv. 4 no.7:93-98 J1 '61. (MIRA 14:8)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.  
(Kazakhstan--Ore deposits)

BURSHTEYN, Ye.F.

Practice of using the PAB-43 compass in large-scale geological mapping. Razved. i okh. nedr 27 no.10:52-53 0 '61. (MIRA 15:3)

1. Moskovskiy gosudarstvennyy universitet.  
(Kazakhstan--Geology--Maps) (Surveyor's compass)

BURSHTEYN, Ye.F.

Leaching of lead from the upper part of the oxidation zone  
in complex metal deposits in central Kazakhstan; in siliceous  
and barite rocks. Vest. Mosk. un. Ser. 4: Geol. 20 no.4:29-38  
Jl-Ag '65. (MIRA 18:9)

1. Kafedra poleznykh iskopayemykh Moskovskogo universiteta.

ROYZMAN, I.S.; BURSHTEYN, Ye.G.

Effect of nicotinic acid on the glycemic curve of healthy and of  
some sick persons. Ukr.biokhim.zhur. 22 no.2:197-204 '50. (MLRA 9:9)

1. Kafedra biokhimii Vnriits'kogo medichnogo institutu.  
(NICOTINIC ACID) (BLOOD SUGAR)

BURSHTEYN, B. I.

U S S R

Extensive utilization of waste-gas heat. B. I. Burshtein. *Energ. Russ.* 1964 No. 8, 25-33. Pebble heaters can be used to raise the heat utilization in off-gases, permitting the recovery of 20-30% of the heat of combustion of the gas. Such heat exchangers would offer the advantages of low air preheating installation costs, the absence of need to clean the preheater surface, a high heat-transfer coefficient, and the ability to operate at high temperatures. Some in diam. have a combined area drop of 10-15% when the gas velocity in the section filled with pebbles is 10-15 m/sec, and the height of the pebble layer is 1-2 m. W. B. p.

*BURSHTEYN, Ye. I*

AID P - 805

Subject : USSR/Engineering  
Card 1/1 Pub. 28 - 4/7  
Author : Burshteyn, Ye. I.  
Title : Boiler economizer with solid heat carrier  
Periodical : Energ. byul., #8, 11-16, Ag 1954  
Abstract : A special type of the boiler flue gas heat economizer is described. Solid mineral particles continuously circulate through the exhaust gas chamber between the superheater steam piping, through the air preheater chamber and finally are carried by conveyer from the bottom pit to the upper bins above the heating chamber. The description is illustrated with a diagrammatic arrangement of the unit and a numerical example for computation of heat transmission characteristics.  
Institution : None  
Submitted : No date

BURSHTEYN, YU. A.

PA 30/19TH

USSR/Chemistry - Systems

Sep 48

Chemistry - Potassium Chloride

"Physicochemical Research in Concentrated Solutions:  
IX, System  $KCl \cdot Al_2Br_6 - C_6H_5NO_2$ ," Ye. Ya. Gorenbeyn,  
Yu. A. Burshteyn, 8 $\frac{1}{2}$  pp

"Zhur Obshch Khimii" Vol XVIII, No 9

Investigates viscosity and specific gravities of system  $KCl \cdot Al_2Br_6 - C_6H_5NO_2$  at temperatures of 20, 30, 40, 50, 60, 70, 80, and 90°, and the electrical conductivity at a temperature of 20° in the concentration range 0.86 to 70.2%  $KCl \cdot Al_2Br_6$ . Submitted 28 Jun. 47.

30/49TH

IL'IN, I. I., kand. med. nauk; KOZHUKHAR', A. V.; BURSHTYIN, Yu. Ya.

Changes in the clinical picture and course of recent gonorrhea  
in males. Vest. dermat. i ven. 34 no.1:63-66 Ja '60.  
(MIRA 14:12)

(GONORRHEA)

IL'IN, I.I., kand.med.nauk; BURSHTYIN, Yu.Ya. (Sevastopol')

Secondary urethromycosis in males. Vest.derm.i ven. no.7:77-79  
'61. (MIRA 15:5)

(URETHRITIS) (MYCOSIS)

IL'IN, I.I., kand. med. nauk (Sevastopol'); BURSHTYIN, Yu.Ya. (Sevastopol');  
KOBEL'EV, A.A. (Sevastopol')

Treatment of chronic prostatitis with intrafocal introduction of  
corticosteroid hormones. Urologiia. no.5:38-41 '64. (MIRA 18:8)

BUREHTIN, Y.

Bol shoi Ferganskii kanal. [The Great Ferghana Canal]. (Mal. sov. ents., 1940,  
v. 10, col. 985).  
DLC: AE55.M3

SO: Soviet Transportation and Communication, A Bibliography. Library of Congress,  
Reference Department. Washington, 1952, Uncl.ified.

BURSHTIN, Y. E.

Avialinii Uzbekistana. [Air lines in Uzbekistan]. (Mal. sov. ents., 1940, v. 10, 936).

DLC: AE55.M3

SO: Soviet Transportation and Communications, A Bibliography, Library of Congress  
Reference Department. Washington. 1952. Unclassified.

BURSH TIN, YE.

Novye zheleznnye dorogi v Zapadnoi Sibir. [New railroads in Western Siberia].  
Novosibirsk, 1932

Evropeisko-Aziatskoe, cherez Sibir' tovarotagazhe<sup>e</sup> soobshchenie. [European-Asiatic  
goods-baggage traffic via Siberia]. Moskva, 1933

SO: Soviet Transportation and Communications, A Bibliography, Library of Congress  
Reference Department Washington, 1962. Unclassified.

BURSHTYN, N.

On collective farms of Leningrad Province. Sel'stoi. 11[i.e.12]  
no.1:8-9 Ja '57. (MLRA 10:3)

1. Starshiy inzhener Leningradskogo oblastnogo upravleniya po  
stroitel'stvu v kolkhozakh.  
(Leningrad Province--Construction industry)

BURSIAN, A.V.

Age characteristics of the reaction of chick embryos to gamma  
radiation. Mat. po evol. fiziol. 4:265-273 '60. (MIRA 13:10)  
(GAMMA RADIATION--PHYSIOLOGICAL EFFECT) (EMBRYOLOGY--BIRDS)

BURSIAN, A.V.

Characteristics of the restoration of hemopoiesis in chick embryos following external  $\gamma$ -irradiation. Biul. eksp. biol. i med. 52 no.7:110-114 J1 '61. (MIRA 15:3)

1. Iz laboratorii ontogeneza nervnoy deyatel'nosti zhivotnykh (zav. - kand. biolog.nauk A.V. Voyno-Yasenetskiy) Instituta evolyutsionnoy fiziologii imeni I.M. Sechenova AN SSSR (direktor - chlen-korrespondent AN SSSR Ye.M. Kreps), Leningrad. Predstavlena akademikom V.N. Chernigovskim.

(HEMATOPOIETIC SYSTEM)  
(GAMMA RAYS--PHYSIOLOGICAL EFFECT)

VOYNO-YASENETSKIY, A.V.; BURSIAN, A.V.

Development of motor activity in chick embryos. Fiziol. zhur.  
49 no.5:609-614 My '63. (MIRA 17:11)

1. From the Sechenov Institute of Evolutionary Physiology, Leningrad.

BURSIAN, A.V.

Effect of light on spontaneous motor activities in chick  
embryos. Biul.eksp.biol.i med. 58 no.7:7-11 JI '64.

(MIRA 18:2)

1. Laboratoriya razvitiya nervnoy deyatel'nosti zhivotnykh  
v ontogeneze (zav. - kand.biol. nauk A.V.Voyno-Yasenetskiy)  
Instituta evolyutsionnoy fiziologii imeni Sechenova (dir. -  
chlen-korrespondent AN SSSR Ye.M.Kreps) AN SSSR, Leningrad.  
Submitted June 17, 1963.

BURSIAN, A.V.

Primitive forms of photosensitivity in the early chick embryogenesis.  
Zhur. evol. biokhim. i fiziol. 1 no.5:435-441 S-0 '65.

(MIRA 18:10)

1. Laboratoriya razvitiya nervnoy deyatel'nosti zhivotnykh v  
ontogeneze Instituta evolyutsionnoy fiziologii i biokhimii  
imeni Sechenova AN SSSR, Leningrad.

BURSIAN, A.V.

Changes in the motor activity in chick embryos at an early stage of development under the effect of monochromatic light. Fiziol. zhur. 51 no.9:1090-1093 3 '65. (MIRA 18:9)

1. Laboratoriya razvitiya nervnoy deyatel'nosti v ontogeneze Instituta evolyutsionnoy fiziologii i biokhimiya imeni I.P. Sechenova AN SSSR, Leningrad.

BURSI, K.

Exhibition of the ten-year-old State clothing industry. p. (3) of cover.

MAGYAR TEXTILTECHNIKA. (Textilipari Muszake es Tudomanyos Egyesulet)  
Budapest, Hungary, Vol. 11, no. 6, June 1959.

Monthly list of East European Accessions (EEAI), LC, Vol. 8, No. 8,  
August 1959.  
Uncla.

BURSIA, E.V.

20-3-16/59

AUTHORS: Kosman, M.S., Bursian, E.V.

TITLE: The Coloring of Single  $\text{BaTiO}_3$  Crystals (Okrashivaniye monokristallov  $\text{BaTiO}_3$ )

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 115, Nr 3, pp. 483-485 (USSR)

ABSTRACT: In the growing of barium metatitanate crystals light yellow to dark brown (almost black) crystals are obtained. The nature of the coloring of these crystals is similar to the nature of the coloring of the alkali-halide crystals and the halide salts of silver. The already earlier observed blackening is connected with the partial reduction and elimination of the metal. The coloring discovered by the authors proceeds otherwise and is a merely physical process which is connected with the displacement of the current carriers. The samples were produced according to Mattias's method, the properties of these samples are shortly enumerated here. The absorption was measured by the photospectrometer CF-4. A diagram illustrates the absorption spectrum of a dark brown single crystal. This crystal was annealed after the growing in hydrogen (or simply in the re-

Card 1/2

20-3-16/59

The Coloring of Single  $\text{BaTiO}_3$

ducing part of the flame of an alcohol burner), whereby it became almost transparent with a slightly yellowish coloring. For this case the absorption spectrum is also illustrated by a curve. After the heating in air or oxygen the spectrum anew takes a brown-red color. This color can, an analogy to the alkali-halide crystals, be designated as additive. The coloring, known from the alkali-halide salts, under the influence of a field is also observed in  $\text{BaTiO}_3$ . The various changes of coloring are described. These crystals can be colored by means of an alternating field. The velocity of the spreading of the brown color is strongly dependent on temperature. (At room temperature 1 mm per day at an electric field strength of  $E = 10 \text{ kV/cm}$ ). The coloring under the influence of the field and the coloring by oxygen might be due to the same coloring centers (Farnsworth centers?). The color of the single crystals changes their electric properties. There are 2 figures and 7 references, 5 of which are Slavic.

ASSOCIATION: Leningrad State Pedagogical Institute imeni A.I.Gertsen (Leningradskiy gosudarstvennyy pedagogicheskiy institut imeni A.I. Gertsena)

PRESENTED: by A.F. Ioffe, Academician, February 18, 1957

SUBMITTED: February 7, 1957

AVAILABLE: Library of Congress

Card 2/2

BURSIAN, E.V. Cand Phys Math Sci --(diss) "Double staining of ~~the~~ monocrystals of barium titanate." Len 1958, 6 pp. (Min of <sup>Education</sup> ~~Instruction~~ RSFSR. Len State Pedagogical Inst im A.I. Gertsen. Chair of General Physics) 150 copies (KL, 39-58, 106)

- 3 -

24(2)  
AUTHORS:

Kosman, M. S., Bursian, E. V.

SOV/46-22-12-12/33

TITLE:

On the Nature of the Farnsworth Centers in Barium Titanate Crystals (O prirode tsentrov okraski v kristallakh titanata bariya)

PERIODICAL:

Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1958, Vol 22, Nr 12, pp 1459-1461 (USSR)

ABSTRACT:

It had been already earlier reported (Ref 1) that a similar phenomenon as in the dyeing of alkali-halide crystals could be observed in  $BaTiO_3$  single crystals. Two kinds of color changes were investigated by the authors on samples, prepared in accordance with an earlier description (Ref 2): a color change of crystals from light yellow to red-brown (v-center) in oxidizing atmosphere (oxygen) and from light yellow to bluish grey (f-center) in the reducing medium (hydrogen, vacuum). The color change can be explained by a sufficient number of defects in the crystal, into which holes from the anode penetrate systematically, thus always forming new v-centers. In order to maintain the neutrality of any crystal part, it will be necessary to assume the original presence of the same amount of positive defects as well as an electrolytic conductivity.

Card 1/2

On the Nature of the Farnsworth Centers in Barium  
Titanate Crystals

SOV/48-22-12-12/33

The latter allows the displacement of defects. The displacement of the f-cloud is conditioned by the movement of electrons. Thus, defects (void spots) are required for dyeing  $\text{BaTiO}_3$  crystals. In such a case, the concentration of such defects can be determined on the basis of the maximum color density, by measuring the absorption coefficient. This is one method by which the quality of single crystals is determined. Thus, for example, it was found that the crystals prepared with  $\text{Fe}_2\text{O}_3$  addition according to the method by Remeyki hardly undergo a color change. This proves their perfection on micro-structure. There are 3 figures and 2 Soviet references.

ASSOCIATION: Leningradskiy gos. pedagogicheskiy institut imeni A. I. Gertsena  
(Leningrad Pedagogical State Institute imeni A. I. Gertsen)

Card 2/2

BURSIAN, E.V.

One possible mechanism underlying the coloring of  $\text{BaTiO}_3$  crystals.  
Uch. zap. Ped. inst. Gertsena, 207:207-209 '61.

(MIRA 16:5)

1. Leningradskiy gosudarstvennyy pedagogicheskiy institut imeni A.I.  
Gertsena.

(Barium titanate crystals)

(Color centers)

BOBOVICH, Ya.S.; BURSIAN, E.V.

Raman spectrum of barium titanate. Opt.1 spektr. 11 no.1:131-  
132 J1 '61. (MIRA 14:10)  
(Barium titanate--Spectra)

24,7000

35021

S/181/62/004/006/048/051  
B108/B138

AUTHORS: Bursian, E. V., and Smirnova, N. P.

TITLE: Monocrystalline  $\text{BaTiO}_3$  layers grown from melt in an oxygen atmosphere

PERIODICAL: Fizika tverdogo tela, v. 4, no. 6, 1962, 1675 - 1676

TEXT: A new technique of growing monocrystalline  $\text{BaTiO}_3$  layers is presented. A layer of  $\text{BaTiO}_3$  powder on a platinum backing is kept at  $1600 - 1700^\circ\text{C}$  in an oxygen atmosphere for 1 - 2 min. When the melt is removed from the heated zone of the furnace, it will form either a monocrystalline layer or a layer consisting of several large monocrystalline blocks. The platinum backing can then serve as one electrode. The other can be applied as a silver paste etc. The crystals obtained are cubic and turn into the ferroelectric tetragonal phase when cooled below their Curie point. Preliminary measurements gave a dielectric constant of 4000 - 6000 at  $20^\circ\text{C}$ , 50 cps on a  $20\mu$  thick specimen. The dielectric constant decreases as the thickness of the specimens is reduced. At the same time the hysteresis loop becomes more

Card 1/2

Monocrystalline BaTiO<sub>3</sub> layers ...

S/181/62/004/006/048/051  
B108/B138

rectangular. There are 2 figures.

ASSOCIATION: Leningradskiy gosudarstvennyy pedagogicheskiy institut im.  
A. I. Gertsena (Leningrad State Pedagogical Institute imeni  
A. I. Gertsen)

SUBMITTED: February 24, 1962

Card 2/2

S/120/63/000/001/065/072  
E032/E314

AUTHOR: Bursian, E.V.

TITLE: An 1800°C furnace with an oxygen atmosphere for growing crystals of oxides and salts

PERIODICAL: Pribery i tekhnika eksperimenta, no. 1, 1963,  
199 - 200

TEXT: The construction of the furnace is illustrated in the figure, in which 1 is an  $Al_2O_3$  tube, 2 a tungsten spiral, 3 - the working volume, 4 - a nickel lead, 5 - a tantalum reflector, 6 - nickel reflectors, 7 - quartz or iron tube, 8 - a copper disc, 9 - pumping tube, 10 - water-cooling system for the disc 8, 11 - rubber rings, 12 - a lid and 13 - fixing bolts. The amount of oxygen passing through the  $Al_2O_3$  tube is less than  $10^{-7}$  g/s/cm<sup>2</sup> at a pressure difference of 1 atm. When the inner tube is 1.6 cm in diameter and the working region 6 cm long, a temperature of 1800°C is reached at about 1.5 kW. A  $10^{-4}$  mm Hg backing pump is used to maintain the pressure of better than  $10^{-4}$  mm Hg, which is sufficient to prevent oxidation of the tungsten spiral. The life of the furnace is determined by the gradual  
Card 1/2

An 1800 °C furnace ....

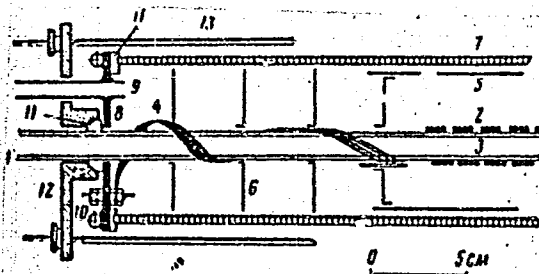
S/120/63/000/001/065/072  
E032/E314

deoxidation of the  $Al_2O_3$ . The lifetime is of the order of some tens of hours at 1800 °C. The device has been used for growing single crystals of barium titanate and for obtaining thin films of this material (the author and Smirnova - Zh. fiz. tv.tela, 1962, 4, 1675). There is 1 figure.

ASSOCIATION: Leningradskiy gosudarstvennyy pedagogicheskiy institut (Leningrad State Pedagogical Institute)

SUBMITTED: March 21, 1962

Схематическое изображение высокотемпературной печи для работы в кислороде. 1 — труба из окиси алюминия, 2 — вольфрамовая спираль, 3 — рабочий объем, 4 — никелевый ввод, 5 — отражатель из танталовой жести, 6 — отражатель из никеля, 7 — кварцевая или железная труба, 8 — медный диск, 9 — патрубок для отсоса воздуха, 10 — водяное охлаждающее устройство, 11 — уплотнительные резиновые кольца, 12 — крышка, 13 — стягивающие болты.



Card 2/2

Figure:

BURSIAN, E.V.; SMIRNOVA, N.P.

Production of crystalline blocks of  $\text{BaTiO}_3$  from the melt in an  
oxygen atmosphere. Kristalografiia 8 no.5:799-800 S-0 '63.  
(MIRA 16:10)

1. Leningradskiy gosudarstvennyy institut im. A.I.Gertsena.

L 20323-65 EWT(1)/EPA(a)-2/EWP(c)/EWT(m)/EPF(h)-2/EPA(w)-2/ESC(t)/  
T/EEC(b)-2/EWP(b)/EWA(h)/ Pab-10/Pt-10/Peb/Pu-4 IJP(c)/ASD(a)-5/  
SSD/AFWL/AS(mp)-2/AFMD(t)/APETR/RAEM(j)/ESD(dp)/ESD(ga)/ESD(t)  
ACCESSION NR: AP4039674 5/0131/04/000/040/1818-1820

AUTHOR: Bursian, E. V.; Smirnova, N. P.

TIT. S: Nonlinear capacitance of thin single crystal films of BaTiO<sub>3</sub> <sup>15</sup>

J. JCE: Fizika tverdogo tela, v. 6, no. 6, 1964, 1818-1820

For. JACS: polarity reversal, capacitance, single crystal, dielectric constant, polarization, ferroelectric, nonlinear capacitance

ABSTRACT: This is a continuation of a whole series of papers (by various authors) devoted to the investigation of polarity reversal in thin films of BaTiO<sub>3</sub>. The authors have extended the range of thickness of single BaTiO<sub>3</sub> crystals that may be investigated for determining the geometrical effect. They have found that non-linear polarization is preserved as the thickness is diminished from 100 to 1 micron, but that the activation field of the nonlinear part increases proportionally to the reciprocal of the thickness. In rather strong fields the temperature dependence of the dielectric constant is preserved, as are the other features of ferroelectricity. These results confirm the view that the surface layer plays a

Card 1/2

L 20373-65  
ACCESSION NR: AP4039674

decisive role in the mechanism of polarization. It is pointed out that complete polarization at saturation proves to be no less for thin layers than for thick, and it may even be greater. A value of 2.5 microcoulombs/cm<sup>2</sup> was obtained for a thickness of 6 microns and of only 2 microcoulombs/cm<sup>2</sup> for a thickness of 30 microns. Orig. art. has: 3 figures.

ASSOCIATION: Leningradskiy gosudarstvennyy pedagogicheskiy institut im. A. I. Gertsena (Leningrad State Pedagogical Institute)

SUBMITTED: 17Jan64

ENCL: 00

SUB CODE: SS, EM

NO REF SOV: 004

OTHER: 005

Card 2/2

L 57565-65 EWT(1)/EWT(m)/EPR(c)/EEC(t)/T/EWP(t)/EWP(b)/EWA(c) P1-4 IJP(c)  
JD/WH/GG

ACCESSION NR: AP5016137

UR/0048/65/029/006/0990/0993

AUTHOR: Bursian, E.V.; Danilyuk, Yu.L.; Shapkin, V.V.

TITLE: Electron paramagnetic resonance of barium titanate crystals containing color centers [Report, 4th All-Union Conference on Ferroelectricity held in Rostov-on-the-Don 12-15 Sept 1965]

SOURCE: AN SSSR, Investiya. Ser. fizicheskaya, v. 22, 1966, no. 1, p. 1-10.

TOPIC TAGS: ferroelectric material, barium titanate, electron paramagnetic resonance, color center

ABSTRACT: Electron paramagnetic resonance (EPR) spectra of barium titanate crystals, powders and ceramics were recorded over a wide range of temperatures that included the rhombohedral, tetragonal and cubic phases in order to determine the effect, if any, of color centers on EPR in this material. Color centers were induced in the crystals by heating them in oxygen or alcohol vapor, or by passing an electric current through them. The observed EPR spectra are described

Card 1/3

L 57565-85

ACCESSION NR: AP5016137

and discussed in some detail. The intensity of the line decreased and its shape became altered in the immediate vicinity of the Curie point. An attempt to detect an effect of ferroelectric polarization reversal on the EPR spectrum was not entirely successful because the alternating polarization reversing field led to excessive heating of the sample. The application of a dc electric field did not affect the EPR spectrum. No effect of color centers (at concentrations up to  $10^{18} \text{ cm}^{-3}$ ) on the EPR spectrum was found, even when the color centers were induced in the crystal by passage of an electric current while the EPR spectrum was being recorded. The observed spectra are ascribed to Fe impurities. It is concluded that neither the F nor the V centers are single-electron centers or centers of any odd order. In a note added in proof the authors report observing in reduced barium titanate powders a weak line similar to that observed by Z. Stroubek and K. Zdansky (Czechoslovakian Phys. Jour. B13, 309, 1963) and ascribed by them to F centers. This line was not observed in all samples and it is not certain that it is due to F centers. Orig. art. has: 3 figures.

Card 2/3

L 57565-65

ACCESSION NR: AP5016137

ASSOCIATION: Leningradskiy gosudarstvennyy pedagogicheskiy institut  
im. A.I. Gertsena (Leningrad State Pedagogical Institute)

SUBMITTED: 00

ENCL: 00

SUB CODE: SS *NP*

NR REF SOV: 001

OTHER: 006

*ja*  
Card *3/3*

L 57558-65 EWT(1)/SPA(s)-2/EWT(m)/ENP(i)/EEC(t)/T/ENP(t)/ENP(L)/EWA(c) Pt-7/P1-4

IJP(c) JD/GG

ACCESSION NR: APSC16144

UR/0048/65/029/006/1016/1018

AUTHOR: Bursian, E.V.; Smirnova, N.P.

TITLE: Concerning spontaneous polarization in barium titanate thin films /Report, 4th All-Union Conference on Ferroelectricity held in Rostov-on-the-Don 12-18 Sept 1964/

SOURCE: AN SSSR.Izvestiya.Ser.fizicheskaya,v.29, no.6, 1965,1016-1018

TOPIC TAGS: ferroelectric material, barium titanate, thin film, pyroelectric effect, dielectric constant, phase transition

ABSTRACT: In this paper the authors report on a continuation of their earlier work (Fiz.tverdogo tela 6,1818,1964) on the ferroelectric properties of thin  $\text{BaTiO}_3$  films. The dielectric constants of films of different thicknesses were measured at different temperatures and different measuring field strengths. The measurements were made with 4 microsec pulses at a repetition rate of  $500 \text{ sec}^{-1}$ . As a function of temperature the dielectric constant of a 27 micron thick film measured with a 2 kV/cm field went through maxima at  $-80^\circ$ ,  $0^\circ$  and

Card 1/3

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ACCESSION NR: AP5016144

120°C. These maxima were less prominent in thinner films, and in 1 micron films they were no longer definitely perceptible. The maximum at 120° decreased the most rapidly, and that at 0° decreased the least rapidly, with decreasing film thickness. Increasing the measuring field strength increased the effective dielectric constant in the orthorhombic phase than in the other two ferroelectric phases. Measurements at different temperatures of the dielectric constant of a 5 micron film was a function of the measuring field strength showed that the rhombohedral phase saturates at a lower field than the orthorhombic phase and the orthorhombic phase saturates at a lower field than the tetragonal phase. Pyroelectric currents were measured in plates from 10 to 100 microns thick. These currents went through maxima near the Curie point. These maxima were more smeared out for the thinner plates, but the areas under the peaks were approximately independent of plate thickness. Orig.art.has: 4 figures.

Card 2/3

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ACCESSION NR: AF5016144

ASSOCIATION: Leningradskiy gosudarstvennyy pedagogicheskiy institut  
im. A.I. Gertsena (Leningrad State Pedagogical Institute)

SUBMITTED: 00

ENCL: 00

SUB CODE: SS, E

NR REF SOV: 003

OTHER: 006

Card

*PK*  
3/3

MASLYANSKIY G.N.; BURSIAI, I.R.; MEL'NIKOVA, N.P.; PODOL'SKIY, M.A.;  
FEDOROV, A.P.; Primali uchastiye: NOVOZHILOVA, T.S.; DAVYDOVA,  
Z.A.; VOLNUKHINA, N.K.

Long service life of a platinum catalyst. Khim.i tekhnol. i  
masel 7 no.2:5-7 F '62. (MIRA 15:1)

1. Krasnodarskiy filial Vsesoyuznogo nefte-gazovogo nauchno-  
issledovatel'skogo instituta i Vsesoyuznyy nauchno-issledovatel'skiy  
institut neftekhimicheskikh protsessov.  
(Platinum) (Cracking process)

BURSIAN, L.R., inzh.

Contactless a.c. voltage and current regulators. Prom. energ.  
17 no.9:9-11 S '62. (MIRA 15:8)  
(Electric controllers) (Voltage regulators)

AUTHORS: Maslyanskiy, G. N., Bursian, N. R. SOV/79-28-10-6/60

TITLE: Kinetics of the Dehydration of Cyclohexane and Its Homologs on the Chromium Catalyst at Atmospheric Pressure (Kinetika degidrirovaniya tsiklogeksana i yego gomologov na khromovom katalizatore pri atmosfernom davlenii)

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol 28, Nr 10, pp 2656 - 2662 (USSR)

ABSTRACT: In the present paper the kinetics of the dehydration of cyclohexane on the  $(Cr_2O_3/Al_2O_3)$  catalyst was investigated at atmospheric pressure. In addition, the relative dehydration velocities of some homologs of cyclohexane (of methyl cyclohexane); 1,3-dimethyl cyclohexane; 1,3,5-trimethyl cyclohexane, isopropyl cyclohexane) were determined. It was found that the rate of the dehydration reaction can be represented by a kinetic equation for the monomolecular reaction which is slowed down by its products (see equation (2) in the experimental part). It is shown that benzene does not exert any hampering effect on the rate of the reaction. The rate of dehydration of the six-membered (cyclo-

Card 1/3

Kinetics of the Dehydration of Cyclohexane and Its Homologs on the Chromium Catalyst at Atmospheric Pressure SOV/79-28-10-6/60

paraffin) increases regularly with increasing molecular weight of the hydrocarbons. Table 1 gives the constants of the hydrocarbons used; table 2 shows the influence of the velocity of the passage of cyclohexane on its dehydration depth; table 3 shows the influence of the reaction temperature on the rate of dehydration of cyclohexane. The dehydration experiments of the cyclohexane mixture with benzene are given in table 4, and the denydration experiments of various six-membered cycloparaffins are given in table 5. There are 5 tables and 16 references, 13 of which are Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut po pererabotke nefi i gaza i polucheniyu iskusstvennogo zhidkogo topliva (All-Union Scientific Research Institute for the Processing of Petroleum and Gases, and For the Production of Synthetic Liquid Fuels)

SUBMITTED: July 29, 1957  
Card 2/3

COMMON ELEMENTS		PROCESS AND PROPERTIES INDEX		COMMON VARIABLE INDEX	
<p><b>CA BURSIAI</b></p> <p><b>Effect of gas treatment on the activity of chromium catalysts.</b> G. N. Maslyanskii and N. R. Bursian (Central Inst. Aviation Fuels and Oils, Moscow). <i>J. Gen. Chem. (U.S.S.R.)</i> 17, 208-12(1947)(in Russian).—(1) The</p>		<p><math>\text{Cr}_2\text{O}_3</math> 20 + <math>\text{Al}_2\text{O}_3</math> 80 catalyst used in dehydrogenation of cyclohexane at 450°, rate of feeding 15 ml./hr./20 ml. catalyst, was regenerated in air at a temp. of 450° to 650°. The activity <math>\alpha</math> (in % dehydrogenation) rose with rising temp. of regeneration, e.g., 6 hrs., 450, 550, 650°, <math>\alpha = 20.8, 25.1, 28.8\%</math>. Lengthening of the time of treatment beyond 6 hrs. had no effect. Changes of <math>\alpha</math> with change of temp. of regeneration are reversible. After treatment at 500° and 600°, the presence of <math>\text{Cr}_2\text{O}_3</math> was detected iodometrically, the ratio <math>\text{Cr}_2\text{O}_3/\text{Cr}_2\text{O}_4</math> being 0.078 and 0.092, resp.; it indicates that high <math>\alpha</math> is linked with formation of higher oxides. This was further confirmed by expts. in which the catalyst, previously treated in air at 500°, was further heated at 600°, 6 hrs., in either air or in <math>\text{N}_2</math>; in the 1st case, <math>\alpha</math> was 28.3%, the catalyst had <math>\eta = 1.4420</math>; in the 2nd case, <math>\alpha = 12.0\%</math>, <math>\eta = 1.4330</math>. (2) Higher temp. of reduction in <math>\text{H}_2</math> of the catalyst previously regenerated in air at 550°, 6 hrs., results in lower <math>\alpha</math>: catalysts reduced for 12 hrs. at 550° and 450° showed initial activities corresponding to 20 and 48 (ml. gas evolved/min.), resp.; however, the less active catalyst remained unchanged over 150 min. of reaction while the activity of the other declined steadily over the same period. (3) Identical reduction at 450°, 12 hrs., of two catalysts, one of which had been previously regenerated in air at 450°, the other at 550°, showed the latter to be more active; consequently, the higher <math>\alpha</math> acquired through air regeneration at a higher temp. is preserved even after reduction.</p>		<p>N. Thon</p>	
<p>AS 6-51A METALLURGICAL LITERATURE CLASSIFICATION</p>					
<p>SECTION 1</p>					

Investigation of the Dehydration Reaction of Cyclohexane on Chromium Catalysts Under Hydrogen Pressure

SOV/79-28-10-7/60

velocity of cyclohexane at increased pressure by means of a kinetic equation taking into account the hindering effect of hydrogen (see experimental part, page 2664). The rules found for the dehydration of cyclohexane on a chromium catalyst at atmospheric pressure remain valid also at pressures of up to 20 atmospheres absolute pressure, as it was demonstrated. The fact is important that the catalyst highly active at atmospheric pressure, considerably loses its activity in experiments carried out at hydrogen pressure, so that the reaction depth of cyclohexane is very low, even at 500° (Refs 6,5). The reason for this is not only to be found in the hydrogen but also in the deactivation of the catalyst. The experiments showed that one and the same amounts of the catalyst show great differences in their activities at atmospheric and increased pressure. This deactivation is probably one of the causes of the limited use of the chromium catalyst in modern aromatization processes. There are 1 figure, 3 tables, and 13 references, 10 of which are Soviet.

Card 2/3

Investigation of the Dehydration Reaction of Cyclo-  
hexane on Chromium Catalysts Under Hydrogen Pressure

SOV/79-28-10-7/60

ASSOCIATION: Vsesoyuznyy institut po pererabotke nefiti i gaza i polu-  
cheniyu iskusstvennogo zhidkogo topliva (All-Union In-  
stitute for the Processing of Petroleum and Gases and for  
the **Production** of Synthetic Liquid Fuels)

SUBMITTED: July 29, 1957

Card 3/3

5.3300

5.1190

S/153/60/003/02/28/034  
B011/B006

AUTHORS: Maslyanskiy, G. N., Bursian, N. R., Barkan, S. A.,  
Kobelev, V. A., Telegin, V. G.

TITLE: Catalytic Isomerization of n-Pentane<sup>1</sup>

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i  
khimicheskaya tekhnologiya, 1960, Vol. 3, No. 2, pp. 359-363

TEXT: Aluminum chloride, besides having certain advantages, also possesses disadvantages which complicate isomerization. In the years between 1948 and 1951, i.e. at a much earlier date than the USA scientists (Refs. 2-4), the authors developed a process for isomerizing normal paraffinic hydrocarbons (from butane to heptane inclusively) (Refs. 5,6) which does not differ fundamentally from the American process. Tungsten sulfide- and specially prepared platinum catalysts were used. They are catalytically active around 400°, so that the reaction proceeds only at increased pressure in presence of hydrogen and by circulating the gas. The catalysts are discussed. The tungsten sulfide WS<sub>2</sub> proved to be most suitable.

Characteristic data on its mode of action in n-hexane isomerization are

Card 1/3

## Catalytic Isomerization of n-Pentane

S/153/60/003/02/28/034  
B011/B006

given in Table 2. Under normal conditions,  $WS_2$  is fairly insensitive to poisoning. After 1500 h however, the degree of isomerization of n-hexane drops from 58.5% to 54%. The stability of  $WS_2$  can be maintained by admixing slight quantities of sulfur to the raw material. This complicates the technical process and corrodes the apparatus. In the case of platinum on fluorinated aluminum oxide, the authors investigated the effect of an increase in fluor content on the activity of the catalyst. It is seen from the results obtained, that the Al-Pt catalyst, prior to activation with fluorine, does not catalyze the isomerization of n-hexane (Fig. 1). At fluorine contents of up to 5%, catalytic activity increases considerably. A further rise in the F content (up to 15%) increases the activity but slightly. Table 1 shows the specific surface of the catalyst as a function of the F content. The above-mentioned increase in activity cannot be explained by an increase in the specific surface alone, but is also due to changes in the chemical- and physical properties of the catalyst. The activity of 0.6% platinum on an aluminum silicate carrier can be increased greatly by changing the properties of the carrier (Table 2). The results obtained using 0.6% palladium on aluminum silicate (Table 2) were even better than those obtained with Pt (52% yields of isopentane). Palladium

Card 2/3

Catalytic Isomerization of n-Pentane

S/153/60/003/02/28/034  
B011/B006

on aluminum silicate can therefore be applied as a suitable substitute for platinum on the same carrier. Finally the authors describe the technical process and give a basic scheme of the isomerization apparatus (Fig. 2). This paper was read at the Vsesoyuznaya Konferentsiya "Puti sinteza iskhodnykh produktov dlya polucheniya vysokopolimerov" (All-Union Conference "Ways for Synthesizing Initial Materials for the Preparation of High Polymer Substances) held at Yaroslavl' from September 29 to October 2, 1958. The specific surface was determined by G. M. Osmolovskiy. There are 2 figures, 2 tables, and 17 references, 9 of which are Soviet. X

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut nefte-khimicheskikh protsessov (All-Union Scientific Research Institute of Petroleum-chemical Processes)

Card 3/3

MASLYANSKIY, G.N.; BURSIAN, N.R.; KAMUSHER, G.D.; BAREAN, S.A.;  
SHUVAYEV, Ye.S.

Catalytic reforming of gasoline fractions on a platinum catalyst.  
Khim.i tekhn.topl.i masel 5 no.9:1-9 S '60. (MTRA 13:9)

1: Vsesoyuznyy nauchno-issledovatel'skiy institut po pererabotke  
nefti i polucheniyu iskusstvennogo topliva i Giproneftezavody.  
(Petroleum--Refining) (Gasoline)

S/065/60/000/009/004/006/XX  
E030/E112

AUTHORS: Maslyanskiy, G.N., Bursian, N.R., Kamusher, G.D.,  
Barkan, S.A., and Shuvayev, Ye.S.

TITLE: Catalytic Reforming of Benzine Fractions on a  
Platinum Catalyst 7

PERIODICAL: Khimiya i tekhnologiya topliv i masel, 1960, No. 9,  
pp. 1-9

TEXT: Full-scale plant studies have been conducted on reforming Eastern and Southern crudes on a platinum/alumina catalyst. Rumanian, Kirkuk, and Egyptian crudes have also been investigated. Two types of plant have been developed with reactor pressures around 20 and 40 atmospheres respectively, the former being better for producing high octane spirit and aromatics for organic synthesis. With a 60-120 °C straight-run fraction at 465 °C, the aromatic yield falls from 27% weight to 22%, and at 505 °C from 36 to 32%, on increasing the pressure from 20 to 40 atmospheres. However, coking of the catalyst and deactivation by sulphur compounds become troublesome at the lower pressures, especially with C<sub>8</sub> and heavier fractions. If the sulphur content

Card 1/3

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S/065/60/000/009/004/006/XX  
E030/E112

Catalytic Reforming of Benzine Fractions on a Platinum Catalyst  
of the crude rises from 0.01% to 0.27%, the octane number falls from 77.3 to 70.3, the aromatic yield falls 1.7 times, and the gas yield increases 1.5 times. The sulphur content of the feedstock should be less than 0.02%, especially at 20 atmospheres operation. For low sulphur crudes (0.05-0.7% sulphur feed), the  $H_2S$  is removed from the circulating gas with ethanolamine, and for high sulphur feeds (greater than 0.7% weight sulphur) hydrofining is necessary. The catalyst can be regenerated by oxidation for about 30 hours at 300-450 °C, with 0.8-1.5% of oxygen in the gas which circulates at 10-20 atmospheres. After subsequent regeneration, the aromatic yield falls by 30-50%. Oxidation at higher temperatures (around 550 °C) is impracticable because the catalyst becomes deactivated. The most important crude factor determining the yield of high octane spirits and aromatics is the naphthene content. Southern crudes (containing about 50% naphthenes) yield 1.5 times more aromatics than Eastern crudes (containing about 25% naphthenes), the difference becoming greater as higher boiling feedstocks are used. At 80 ON severity, the 85-180 °C cuts yields 83% motor  
Card 2/3

S/065/60/000/009/004/006/XX  
E030/E112

Catalytic Reforming of Benzine Fractions on a Platinum Catalyst

spirit from Eastern crude, and 91% from Southern crudes.

A.A. Potapova participated in the work.

There are 2 figures, 4 tables and 17 references: 5 Soviet and 12 non-Soviet.

ASSOCIATION: VNIIneftekhim, Giproneftezavody  
(VNIIneftekhim, Giproneft Works)

Card 3/3

MASLYANSKIY, G.N.; BURSIAN, N.R.; BARKAN, S.A.; KOBELEV, V.A.; TELEGIN, V.G.

Catalytic isomerization of n-pentane. Izv.vys.ucheb.zav.;  
khim.i khim.tekh.3 no.2:359-363 '60. (MIRA 14:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut neftekhmicheskikh  
protssosov.

(Pentane)

86507

S/079/60/030/011/013/026  
B001/B066

11.12.10

AUTHORS: Bursian, N. R. and Maslyanskiy, G. N.

TITLE: Investigation of Cyclohexane Conversions With a Molybdenum Catalyst

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 11, pp.3702-3708

TEXT: It is shown in the present paper that two reversible reactions occur at the same time when passing cyclohexane over the catalyst ( $\text{MoO}_3/\text{Al}_2\text{O}_3$ ) at a hydrogen pressure between 10 and 40 atm and at temperatures between 455 and 495°C : dehydrogenation of cyclohexane to benzene, and its isomerization to methyl cyclopentane. It was the purpose of the present paper to study the influence of reaction conditions upon the composition of reaction products, and to determine the factors by which the relative rates of dehydrogenation and isomerization of cyclohexane might be controlled. The reaction conditions correspond approximately to those used in the industry in aromatization processes (with the above molybdenum catalyst). To analyze the results, the equilibrium ratios of the reactants had to be calculated from the course

Card 1/3